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EXAMINER	
PHAN, HANH	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,101	SAKANO ET AL.	
	Examiner	Art Unit	
	Hanh Phan	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 8-11* is/are rejected.

7)☒ Claim(s) *2 and 4-7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 10/18/2004.

2. The indicated allowability of claims 3, 8 and 9 is withdrawn in view of the newly discovered reference(s) to Ukaji et al (US Patent No. 6,804,468) and Chiou et al (US Patent No. 6,501,582). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Ukaji et al (US Patent No. 6,804,468).

Regarding claims 1, 3, 10 and 11, referring to Figure 2, Ukaji discloses a wavelength converter comprising:

an optical/electrical signal converter (i.e., O/E converter 9, Fig. 2) for converting input optical signals into electric digital signals;

a clock generation unit (i.e., transfer rate detector 17 and retiming unit 18, Fig. 2) connected to the optical/electrical signed converter for automatically identifying one of at least two predetermined signal transmission modes for the electrical digital signals and generating phase-synchronized clock signals with a specified frequency that matches the identified signal transmission mode;

a timing regeneration circuit (i.e., transfer rate detector 17 and retiming unit 18, Fig. 2) connected to the clock generation unit for regenerating a clock timing for the electrical digital signals based upon the phase-synchronized clock signals that are generated from the clock generation unit; and

an electrical/optical converter(i.e., E/O converter 5-2, Fig. 2) connected to the timing regeneration circuit for converting the electrical digital signals that are outputted from the timing regeneration circuit into optical signals with a specified wavelength for wavelength-division multiplexed transmission (col. 3, lines 8-67 and col. 4, lines 1-29).

Regarding claim 8, referring to Figure 2, Ukaji discloses an optical communication apparatus comprising:

a first clock generation circuit (i.e., transfer rate detector 17 and retiming unit 18, Fig. 2) for automatically identifying a transmission mode for transmission digital signals and for generating phase-synchronized clock signals with a specified frequency that matches the signal transmission mode;

a first timing regeneration circuit (i.e., retiming unit 18, Fig. 2) connected to said first clock generation circuit for regenerating clock timing for the transmission digital

signals based upon the phase-synchronized clock signals from said first clock generation circuit;

a first electric/optical converter (i.e. E/O 5-2, Fig. 2) connected to said first timing regeneration circuit (retiming unit 18) for converting the transmission digital signals from said first timing regeneration circuit into first optical signals at a specified wavelength, said first electric/optical converter (E/O 5-2) transmitting the optical signals to an optical network node;

a first optical/electrical converter (i.e., O/E 9, Fig. 2) connected to the optical network node for converting the optical signals at a specified wavelength that are received from an optical network node into electrical, received digital signals;

a second clock generation circuit (i.e., transfer rate detector 17 and retiming unit 18, Fig. 2) connected to said first optical/electrical converter for automatically identifying the transmission mode for the electrical digital signals from said optical/electrical signal converter and for generating phase-synchronized clock signal at a specified frequency that matches the signal transmission mode of the electrical digital signals; and

a second timing regeneration circuit (i.e., retiming unit 18, Fig. 2) connected to said second clock generation circuit for regenerating the clock timing for the electrical received digital signals based upon the phase-synchronized clock signals from said second clock generation circuit (col. 3, lines 8-67 and col. 4, lines 1-29).

Regarding claim 9, Ukaji teaches further comprising: client equipment connected to said second timing regeneration circuit; a second optical/electrical signal converter connected to said client equipment for converting the transmission optical signals

received from said client equipment into the transmission digital signals; and a second electric/optical converter connected to said second timing regeneration circuit for converting the electrical received digital signals from said second timing regeneration circuit into second optical signals and for transmitting the second optical signals to the client equipment (Fig. 2).

5. Claims 1, 3 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Chiou et al (US Patent No. 6,501,582).

Regarding claims 1, 3, 10 and 11, referring to Figure 2, Ukaji discloses a wavelength converter comprising:

an optical/electrical signal converter (i.e., photo-detector 18, Fig. 3) for converting input optical signals into electric digital signals;

a clock generation unit (i.e., PLL circuit 32 and reference clock 34, Fig. 3) connected to the optical/electrical signed converter for automatically identifying one of at least two predetermined signal transmission modes for the electrical digital signals and generating phase-synchronized clock signals with a specified frequency that matches the identified signal transmission mode;

a timing regeneration circuit (i.e., PLL circuit 32 and reference clock 34, Fig. 3) connected to the clock generation unit for regenerating a clock timing for the electrical digital signals based upon the phase-synchronized clock signals that are generated from the clock generation unit; and

an electrical/optical converter(i.e., light emitter 26, Fig. 3) connected to the timing regeneration circuit for converting the electrical digital signals that are outputted from the timing regeneration circuit into optical signals with a specified wavelength for wavelength-division multiplexed transmission (col. 4, lines 28-45).

Regarding claim 8, referring to Figure 3, Chiou discloses an optical communication apparatus comprising:

a first clock generation circuit (i.e., PLL circuit 32 and reference clock 34, Fig. 3) for automatically identifying a transmission mode for transmission digital signals and for generating phase-synchronized clock signals with a specified frequency that matches the signal transmission mode;

a first timing regeneration circuit (i.e., PLL circuit 32 and reference clock 34, Fig. 3) connected to said first clock generation circuit for regenerating clock timing for the transmission digital signals based upon the phase-synchronized clock signals from said first clock generation circuit;

a first electric/optical converter (i.e. light emitter 26, Fig. 3) connected to said first timing regeneration circuit for converting the transmission digital signals from said first timing regeneration circuit into first optical signals at a specified wavelength, said first electric/optical converter transmitting the optical signals to an optical network node;

a first optical/electrical converter (i.e., photo-detector 18, Fig. 3) connected to the optical network node for converting the optical signals at a specified wavelength that are received from an optical network node into electrical, received digital signals;

a second clock generation circuit (i.e., PLL circuit 32 and reference clock 34, Fig. 3) connected to said first optical/electrical converter for automatically identifying the transmission mode for the electrical digital signals from said optical/electrical signal converter and for generating phase-synchronized clock signal at a specified frequency that matches the signal transmission mode of the electrical digital signals; and

a second timing regeneration circuit (i.e., PLL circuit 32 and reference clock 34, Fig. 3) connected to said second clock generation circuit for regenerating the clock timing for the electrical received digital signals based upon the phase-synchronized clock signals from said second clock generation circuit (col. 4, lines 28-45).

Regarding claim 9, Chiou teaches further comprising: client equipment connected to said second timing regeneration circuit; a second optical/electrical signal converter connected to said client equipment for converting the transmission optical signals received from said client equipment into the transmission digital signals; and a second electric/optical converter connected to said second timing regeneration circuit for converting the electrical received digital signals from said second timing regeneration circuit into second optical signals and for transmitting the second optical signals to the client equipment (Fig. 3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morkel (US Patent No. 6,476,953) in view of Ukaji et al (US Patent No. 6,804,468).

Regarding claims 1, 10 and 11, referring to Figure 1, Morkel discloses a wavelength converter comprising:

an optical/electrical signal converter (i.e., O/E converter 14, Fig. 1) for converting input optical signals into electric digital signals;

a clock generation unit (i.e., clock extract 16, Fig. 1) connected to the optical/electrical signed converter for automatically identifying a signal transmission mode for the electrical digital signals and generating phase-synchronized clock signals with a specified frequency that matches the signal transmission mode;

a timing regeneration circuit (i.e., D-type FF 18, Fig. 1) connected to the clock generation unit for regenerating a clock timing for the electrical digital signals based upon the phase-synchronized clock signals that are generated from the clock generation unit; and

an electrical/optical converter(i.e., E/O converter 20, Fig. 1) connected to the timing regeneration circuit for converting the electrical digital signals that are outputted from the timing regeneration circuit into optical signals with a specified wavelength for wavelength-division multiplexed transmission (col. 4, lines 11-50).

Morkel differs from claims 1, 10 and 11 in that he fails to teach a clock generation unit connected to the optical/electrical signed converter for automatically identifying one of at least two predetermined signal transmission modes for the electrical digital signals

and generating phase-synchronized clock signals with a specified frequency that matches the identified signal transmission mode. However, Ukaji in US Patent No. 6,804,468 teaches a clock generation unit connected to the optical/electrical signed converter for automatically identifying one of at least two predetermined signal transmission modes for the electrical digital signals and generating phase-synchronized clock signals with a specified frequency that matches the identified signal transmission mode (Fig. 2, col. 3, lines 8-67 and col. 4, lines 1-29). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the clock generation unit connected to the optical/electrical signed converter for automatically identifying one of at least two predetermined signal transmission modes for the electrical digital signals and generating phase-synchronized clock signals with a specified frequency that matches the identified signal transmission mode as taught by Ukaji in the system of Morkel. One of ordinary skill in the art would have been motivated to do this since Ukaji suggests in column 3, lines 8-67 and col. 4, lines 1-29 that using such the clock generation unit connected to the optical/electrical signed converter for automatically identifying one of at least two predetermined signal transmission modes for the electrical digital signals and generating phase-synchronized clock signals with a specified frequency that matches the identified signal transmission mode have advantage of allowing the pulse width distortion generated in optical transmission between two WDM optical transmission apparatus is corrected so that jitter between them is compressed.

Allowable Subject Matter

8. Claim 2 and 4-7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

HANH PHAN
PRIMARY EXAMINER